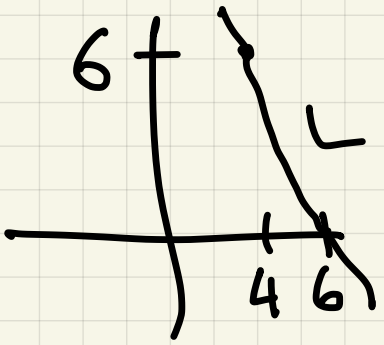
Exam 2



① (a) $m = \frac{y_2-y_1}{x_2-x_1} = \frac{6-0}{4-6} = \frac{6}{-2} = -3$

(b) $y-0 = -3(x-6) = -3x+18$

(c) = (0, 18)

(d) $m' = 1/3$, $y-4 = \frac{1}{3}(x-6) \Rightarrow y = \frac{1}{3}x+2$

② (a) $h(1) = \sqrt{3-2} = 1$, $h(6) = \sqrt{3(6)-2} = \sqrt{16} = 4$

(b) $3x-2 \geq 0 \Rightarrow 3x \geq 2 \Rightarrow x \geq 2/3 \Rightarrow [2/3, \infty)$

(c) $(h+k)(x) = \sqrt{3x-2} + \frac{1}{x-3}$ (d) $(k \circ h)(x) = \frac{1}{\sqrt{3x-2}-3}$

(e) $f(x) = \sqrt{x}$, $g(x) = 3x-2$ or $f = \sqrt{x-2}$, $g = 3x$

③ (a) leading term $-x^6 \Rightarrow$  falls to left, falls to right

(b)

zero	-3	0	6
mult	1	2	3

④



(c)



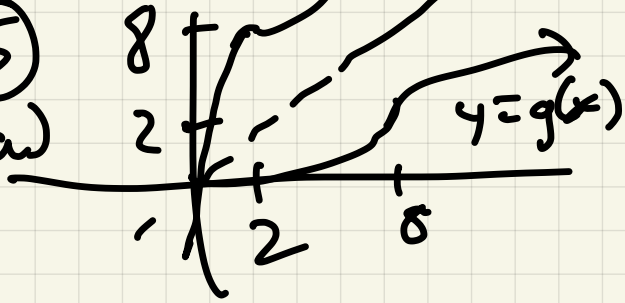
(a) $(h,k) = (3,4)$

(b) $y = a(x-3)^2+4$, $(-1,0) \Rightarrow$

$0 = a(-1-4)^2+4 = 16a+4 \Rightarrow a = -\frac{1}{4}$,

so $y = -\frac{1}{4}(x-3)^2+4$. (c) $-\frac{1}{4}(0-3)^2+4 = 7/4$

⑤



(a)

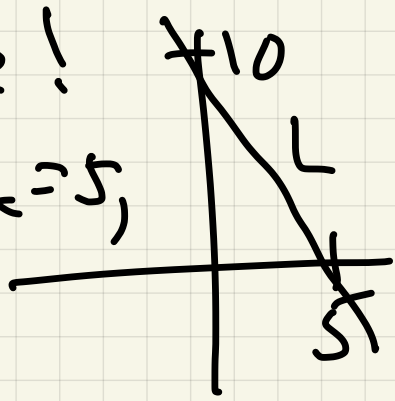
(b) $x = (y-2)^3+8 \Rightarrow$

$x-8 = (y-2)^3 \Rightarrow$

$\sqrt[3]{x-8} = y-2 \Rightarrow y = 2+\sqrt[3]{x-8}$

⑥ (a) $y = \underset{m}{-2}x + \underset{b}{10}$ is a line!

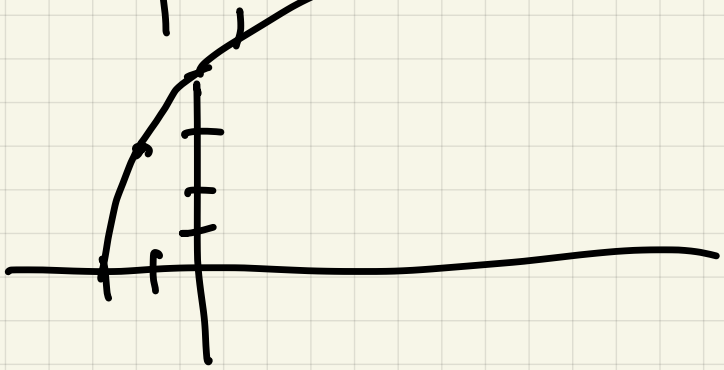
$b = 10$ y-int, $y = 0 \Rightarrow 2x = 10 \Rightarrow x = 5$;



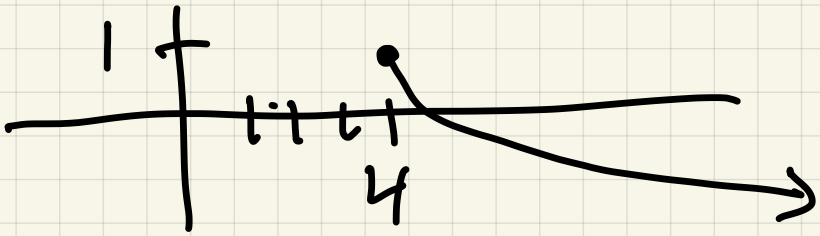
(b)



(c)



(d)



(e) $y = 2x^2 + 8x - 2 = 2(x^2 + 4x + 4) - 2 - 8 =$

$2(x+2)^2 - 10 \Rightarrow$ vertex $(h,k) = (-2,-10)$

